

## **Response to KING 5 inquiry on AY-102 leak assessment report 4.17.13**

### **Why did WRPS not investigate or ignore strong indicators that AY-102 was leaking a year before the announcement came from DOE in October 2012?**

The events you describe in your various questions were investigated and determined unlikely to be caused by a leak.

As for the October 2011 events, experience gained over decades of tank farm operations led us to believe that a small amount of rainwater, not waste, was collecting in the AY-102 annulus. This was based on recent heavy rainfall, the discovery of water intrusion pathways, known low levels of radioactive cross-contamination between the primary tank and the annulus, and readings from the leak detection system.

- There was no threat to the environment, the public or our workers. Because of the small amount of any liquid indicated by the ENRAF, its location within the sealed annulus, and the double-filtered ventilation system on the annulus, waiting until a scheduled video inspection in August, posed no appreciable risk.
- Worker safety was a strong motivator. Making an unscheduled annulus entry into a tank holding 850,000 gallons of high-level radioactive waste, when a later inspection was already scheduled posed an unnecessary risk to our employees.

Subsequent events involving a broken ENRAF in May and June 2012 did not provide a basis for altering that decision.

- Contamination readings found on the drum and reel were well below what would have been expected from tank waste.

### **Question: “Recommendations by engineer Gary Tardiff that were not heeded of a camera being inserted. Why was earlier information ignored until August 2012 when video inspection revealed leaks?”**

Recommendations are not ignored; they are documented with a formal “Problem Evaluation Request” or PER and are thoroughly evaluated. Gary Tardiff wrote a PER requesting a camera be inserted in the AY-102 annulus to try and pinpoint the source of water in the annulus. The PER went through the formal evaluation and disposition process and it was decided to not redirect resources to conduct a video inspection of AY-102 at that time.

A video inspection would have taken several days of work planning to prepare employees for a hazardous job and, by the time the camera could be inserted in the annulus, the ventilation

system would have dried out the moisture, making it difficult to determine the source of water intrusion.

Instead, it was decided to combine two video inspections into one -- the requested video inspection for water intrusion with a routine visual tank integrity inspection scheduled for August 2012.

Visual inspections of AY-102 were performed on August 1 (Risers 87 and 89), and August 5, 2012 (Risers 77 and 80). The selection of these risers was based on a recommendation identified in the PER written by Gary Tardiff. Inspections using Risers 77 and 87 identified unexpected material on the annulus floor that was not present in earlier inspections. After these initial observations, additional risers were selected as part of a comprehensive annulus visual inspection with emphasis placed on the annulus floor and refractory. Eventually ten risers were accessed to complete the inspection.

The tank was not confirmed as leaking until the material in the annulus was sampled and a laboratory analysis of the material was completed in October 2012 and it was determined that the material was consistent with the waste in the primary tank. The formal Tank Leak Assessment process was conducted in parallel with the sampling and laboratory analysis. The Leak Assessment Report was completed and issued shortly after the laboratory analysis results.

**Question: “What exactly did WRPS tell DOE and Ecology and when?”**

DOE and Ecology were notified on Oct. 13, 2011, shortly after the wet ENRAF was found and were kept informed of follow-up actions related to ENRAF maintenance and repair.

Ecology, as the main state regulator, is intimately involved in deciding the course of the Hanford cleanup mission. Legal commitments, known as Consent Decree milestones, are attached to timelines and used to direct cleanup activities.

The legal commitments DOE has to meet these Consent Decree cleanup milestones, along with risk reduction, worker safety and funding, form the basis for deciding what work is done in the tank farms and when.

Ecology is part of that decision-making process and is continually kept informed of issues and progress.

We strongly encourage you to contact the Dept. of Ecology with questions on permits and Consent Decree milestones.

**Question: “How much does WRPS estimate that AY-102 has leaked so far?”**

The estimated leak volume at the time of the Leak Assessment report issuance in October 2012 was 190 – 520 gal; as significant portion of the liquid has evaporated, leaving about 20 – 50 gal of drying waste. There has been no appreciable change since then.